

WHAT IS CLAIMED IS:

1. A switching power supply, comprising:

a switching element which constitutes a switching circuit for converting an input voltage from a direct current into an alternating current;

a main transformer which performs voltage transformation on the input voltage converted into the alternating current by the switching circuit;

a rectifier which constitutes a rectifier circuit for converting, from the alternating current into a direct current, the input voltage on which the voltage transformation is performed by the main transformer; and

a choke coil which constitutes a smoothing circuit for filtering the input voltage converted into the direct current by the rectifier circuit, all of the switching element, the main transformer, the rectifier and the choke coil being mounted on a base plate,

wherein the base plate includes a pedestal portion higher than surrounding regions thereof,

at least any of the switching element and the rectifier is mounted on the pedestal portion of the base plate,

the choke coil is higher than the switching element and the rectifier, and mounted in a region other than a region where the pedestal portion is

formed within a region on the base plate, and

a coolant channel through which coolant flows is formed inside the pedestal portion.

2. The switching power supply according to claim 1,

5 wherein an opening portion is formed on a back side of the pedestal portion, and

the coolant channel is defined by means of a channel sidewall integrally provided upright on the back side of the pedestal portion and of a cover plate
10 which covers the opening portion.

3. The switching power supply according to claim 1, wherein, on the cover plate, an inlet pipe through which the coolant is flown into the coolant channel and an outlet pipe through which the coolant is flown out
15 of the coolant channel, the inlet and outlet pipes extending in a normal direction of the cover plate, are integrally molded.

4. The switching power supply according to claim 3,

20 wherein a flange portion is formed at an end portion of each of the inlet pipe and the outlet pipe, and

a step portion having a larger diameter than that of the flange portion is formed at a base of each of the inlet pipe and the outlet pipe.

25 5. The switching power supply according to claim 3,

wherein, when the outlet pipe is positioned vertically

above the inlet pipe, the coolant channel in the vicinity of the outlet pipe is inclined upward relative to a horizontal direction.

5 6. The switching power supply according to claim 3, wherein, when the outlet pipe is positioned vertically above the inlet pipe, the coolant channel is routed to have no flexure projecting vertically upward.